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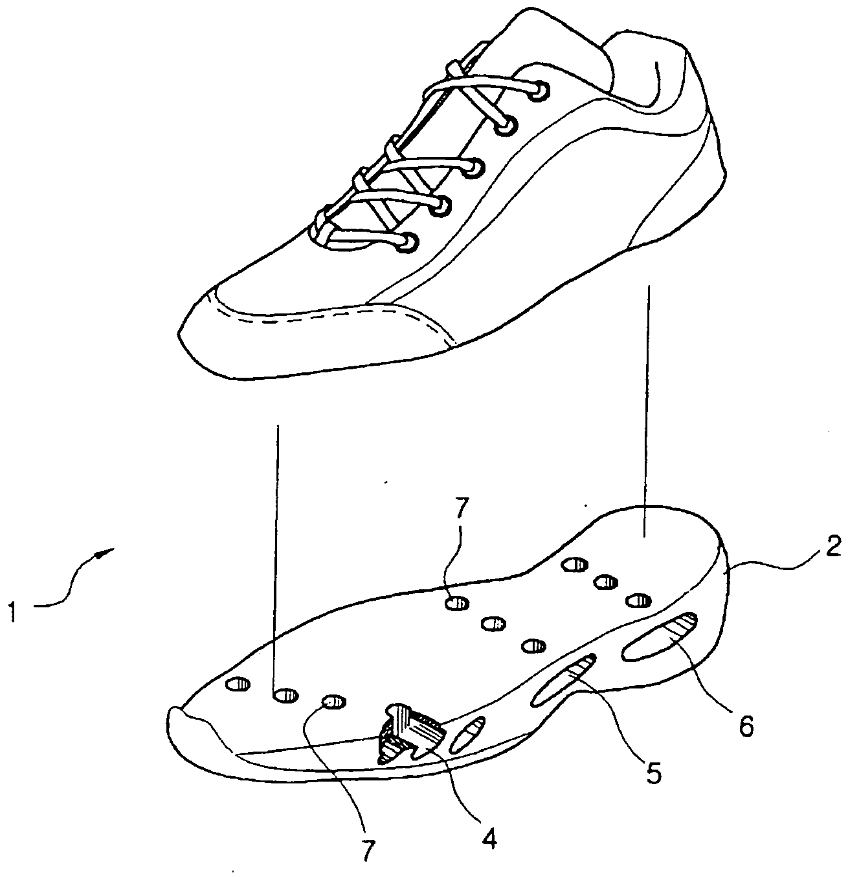
(54) Title: STRUCTURE OF SHOES



(57) Abstract: The present invention relates to a structure of shoes capable of improving a shock-absorbing function and enhancing a ventilation capability to constantly maintain the interior of the shoe in a fresh state. The structure of shoes has a plurality of horizontal through holes 4,5 and 6 on the front and back portions of the sole 2 of each shoe 1, the structure of shoes including a plurality of communicating holes 7 that are provided on the horizontal through holes 4 and 5 of the sole 2 formed on the portions where the toes and arch part of a foot are placed in such a manner as to communicate with the horizontal through holes 4 and 5, thereby making it possible to circulate air in the interior of the shoes.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

STRUCTURE OF SHOES

Technical Field

The present invention relates to a structure of shoes, and more particularly, to a structure of shoes capable of improving a shock-absorbing function and enhancing a ventilation capability to constantly maintain the interior of the shoe in a fresh state.

Background Art

Typically, the sole of a shoe is provided with a shock buffering part that serves to absorb the shock applied to the heel of a foot according to a user's body weight at the time of walking or running to thereby reduce the fatigue of the sole of the foot and at the same time to prevent the generation of the disk on his or her waist caused due to the severe impact onto his or her spine or pelvis.

FIGS. 1 and 2 show the examples of a conventionally developed shoe's structure.

As shown, the shoe 1 is provided on the front and back portions of a sole 2 with a plurality of buffering through holes 3 that are formed horizontally.

With the plurality of buffering through holes 3, the structure of the conventionally developed shoe is designed to absorb the impact that has been generated upon walking or running to thereby avoid the application of it to the sole of the foot.

That is to say, the fatigue of a foot can be substantially reduced or removed.

By the way, the structure of the conventionally developed shoe as shown in FIGS. 1 and 2 fails to show a ventilation capability, which causes the foot to be wet with perspiration with the result that bad small is emitted from the interior of the shoe and when a user wears the shoes for a relatively long period of time, he or she may have athlete's foot.

Disclosure of Invention

To solve the above-described problems, it is an object of the present invention to provide a structure of shoes capable of improving a shock-absorbing function and enhancing a ventilation capability to constantly maintain the interior of the shoe in a fresh state.

To accomplish this and other objects of the present invention, there is provided a structure of shoes having a plurality of horizontal through holes on the front and back portions of the sole of each shoe, the structure of shoes comprising a plurality of communicating holes that are provided on the horizontal through holes formed on the portions where user's toes and arch part are placed in such a manner as to communicate with the horizontal through holes, thereby making it possible to circulate air in the interior of the shoes.

Brief Description of the Drawings

Further objects and advantages of the invention can be more fully understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view showing the outer appearance of the conventionally developed shoes;

FIG. 2 is an exploded perspective view of FIG. 1;

FIG. 3 is an exploded perspective view showing a structure of shoes according to the present invention;

FIG. 4 is a plan view showing the state where the sole of a foot is placed on the top surface of the sole of the shoe according to the present invention; and

FIG. 5 is a sectional view showing another embodiment of the sole of the shoe of the present invention.

Best mode for Carrying Out the Invention

Now, an explanation of the preferred embodiment of the present invention will be described with reference to accompanying drawings.

FIG. 3 is an exploded perspective view showing a structure of shoes according to the present invention, and FIG. 4 is a plan view showing the state where the sole of a foot is placed on the top surface of the sole of the shoe according to the present invention.

As shown, the structure of shoes according to the present invention has a plurality of horizontal through holes 4, 5 and 6 on the front and back portions of the sole 2 of each shoe 1, the structure of shoes including a plurality of communicating holes 7 that are provided on the horizontal through holes 4 and 5 of the sole 2 formed on the portions where user's toes and arch part are placed in such a manner as to communicate with the horizontal through holes 4 and 5, thereby making it possible to circulate air in the interior of the shoes.

In this case, preferably, the plurality of horizontal through holes 4, 5 and 6 have a generally oval section to exert excellent compressing and restoring capabilities.

In operation, the impact that is generated upon walking or slight running is generally removed through the plurality of horizontal through holes 4, 5 and 6, with a result that the fatigue of a foot can be substantially reduced.

In more detail, the horizontal through holes 4, 5 and 6 are formed on the portions of the sole 2 of the shoe where the heel, sole and toes of the foot are placed, and therefore, even through the heel of the foot or the toes of the foot at first come(s) in contact with the ground, the impact applied to the foot can be greatly reduced

As mentioned above, on the other hand, the structure of shoes is provided with the plurality of communicating holes 7 that are provided on the horizontal through holes 4 and 5 of the sole 2 formed on the portions where user's toes and arch part are placed in such a manner as to communicate with the horizontal through holes 4 and 5, thereby making it possible to circulate air in the interior of the shoes. Therefore, ventilation is carried out to the toes of the foot and the arch part thereof, thereby making the perspiration and smell caused from them easily removed.

In more detail, about 80 % or more of people generally make their foot come in contact with the ground in the order of the heel, the sole and the toes of the foot at the time of walking and jogging at a low speed.

Then, the sole 2 of the shoe starts to be compressed by the user's body weight such that the horizontal through hole 6, the horizontal through hole 5 and the horizontal through hole 4 are sequentially changed into the compressed state.

As the horizontal through holes 4, 5 and 6 are compressed, the air charged therein flows rapidly to the plurality of communicating holes 7 with a result that it flows into the interior of the shoe 1.

Referring to the air flowing to the whole shoe, if the heel of the foot at first comes in contact with the ground, a pressure is applied to the horizontal through hole 6 on the back portion of the sole 2. Thereby, at the moment where the air in the shoe is ejected to the outside through the horizontal through hole 6, external air is supplied through the horizontal through holes 4 and 5. Then, the toes of the foot and the arch part of the center of the sole of the foot come sequentially in contact with the ground and at the same time, the heel of the foot is separated from the ground. In this case, the air in the shoe is ejected to the outside through the horizontal through holes 4 and 5 and the external air is supplied through the horizontal through hole 6 and the communicating holes 7 to the interior of the shoe.

As the above-mentioned processes are repeatedly carried out, therefore, the interior of the shoe 1 can be maintained in a fresh state by ejecting the air existing therein to the outside and supplying the external air thereto such that the perspiration and smell that have been generated from the toes or the arch part of the center of the sole of the foot can be all emitted to the outside with ease.

As the perspiration generated from the toes of the foot does not stay in the interior of the shoe, therefore, the user can prevent the generation of the athlete's foot.

On the other hand, the shoes according to the present invention can be used only indoors because they cannot prevent the flowing of fluid such as water to the interior thereof, when used outdoors

As shown in FIG. 5, however, the shoe 1 of the present invention is provided with a water-resistant and ventilating part 8 on the one end side of the horizontal through holes 4, 5 and 6 and with a water-resistant and ventilating part 9 on the other end side of the horizontal through holes 4, 5 and 6.

The water-resistant and ventilating part 8 is formed of rectas cloth, and the water-resistant and ventilating part 9 is formed of goretex cloth.

In this case, the water-resistant and ventilating part 8 may be formed within each of the plurality of communicating holes 7.

With the water-resistant and ventilating parts 8 and 9, the shoes of the present invention allow air to flow to the interior thereof and also prevent water from flowing thereto, which enables it to be used outdoors.

Industrial applicability

As set forth in the foregoing, there is provided a structure of shoes capable of improving a shock-absorbing function and enhancing a ventilation capability to constantly maintain the interior of the shoe in a fresh state.

While the present invention has been described with reference to a few specific embodiments, the description is illustrative of the invention and is not to be construed as limiting the invention. Various modifications may occur to those skilled in the art without departing from the true spirit and scope of the invention as defined by the appended claims.

What Is Claimed Is:

1. A structure of shoes having a plurality of horizontal through holes (4,5, and 6) on the front and back portions of the sole (2) of each shoe (1), the structure of shoes comprising a plurality of communicating holes (7) that are provided on the horizontal through holes (4 and 5) of the sole (2) formed on the portions where the toes and arch part of a foot are placed in such a manner as to communicate with the horizontal through holes (4 and 5), thereby making it possible to circulate air in the interior of the shoes.

2. The structure of shoes according to claim 1, wherein said horizontal through holes (4, 5 and 6) of said sole (2) are provided with a water-resistant and ventilating part (8) on the one end side thereof and with a water-resistant and ventilating part (9) on the other end side thereof.

3. The structure of shoes according to claim 2, wherein said water-resistant and ventilating part (8) is formed of rectas cloth and said water-resistant and ventilating part (9) is formed of goretex cloth.

4. The structure of shoes according to claim 1 or 2, wherein each of said horizontal through holes (4 and 5) has a generally oval section.

Figure 1

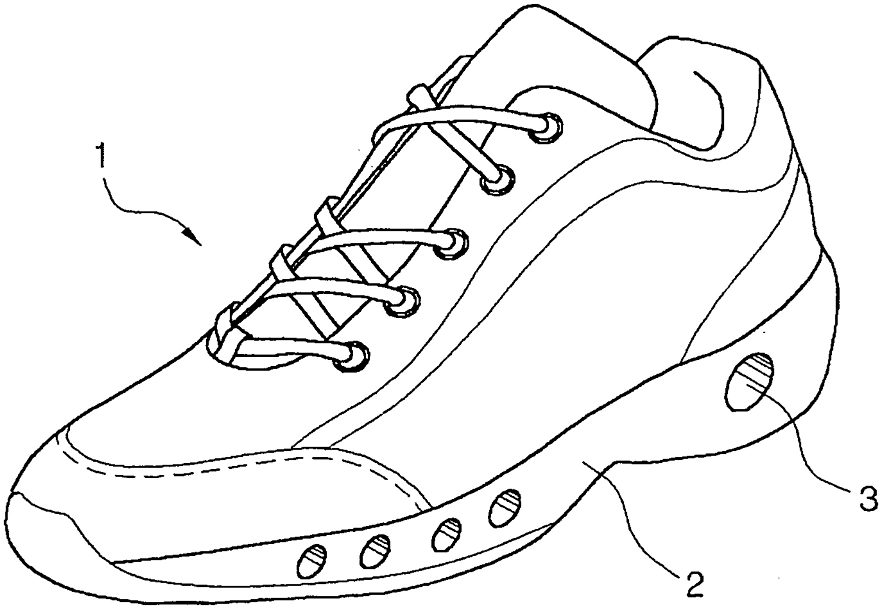


Figure 2

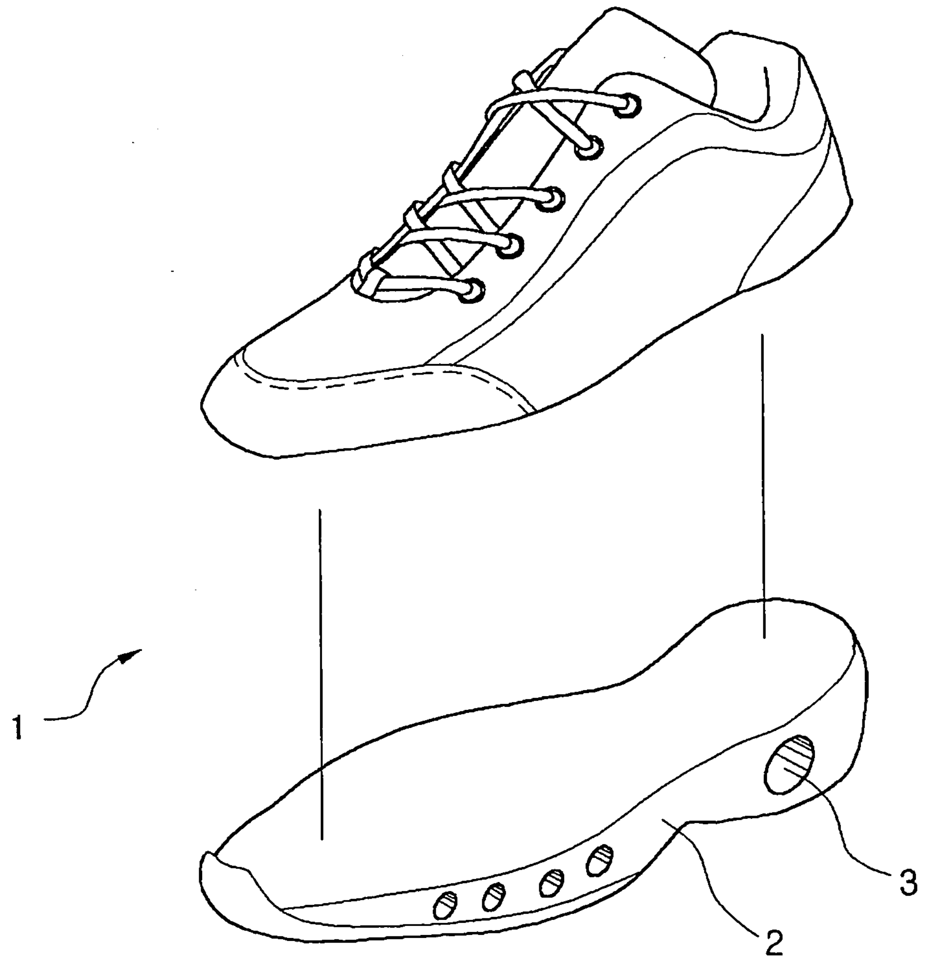


Figure 3

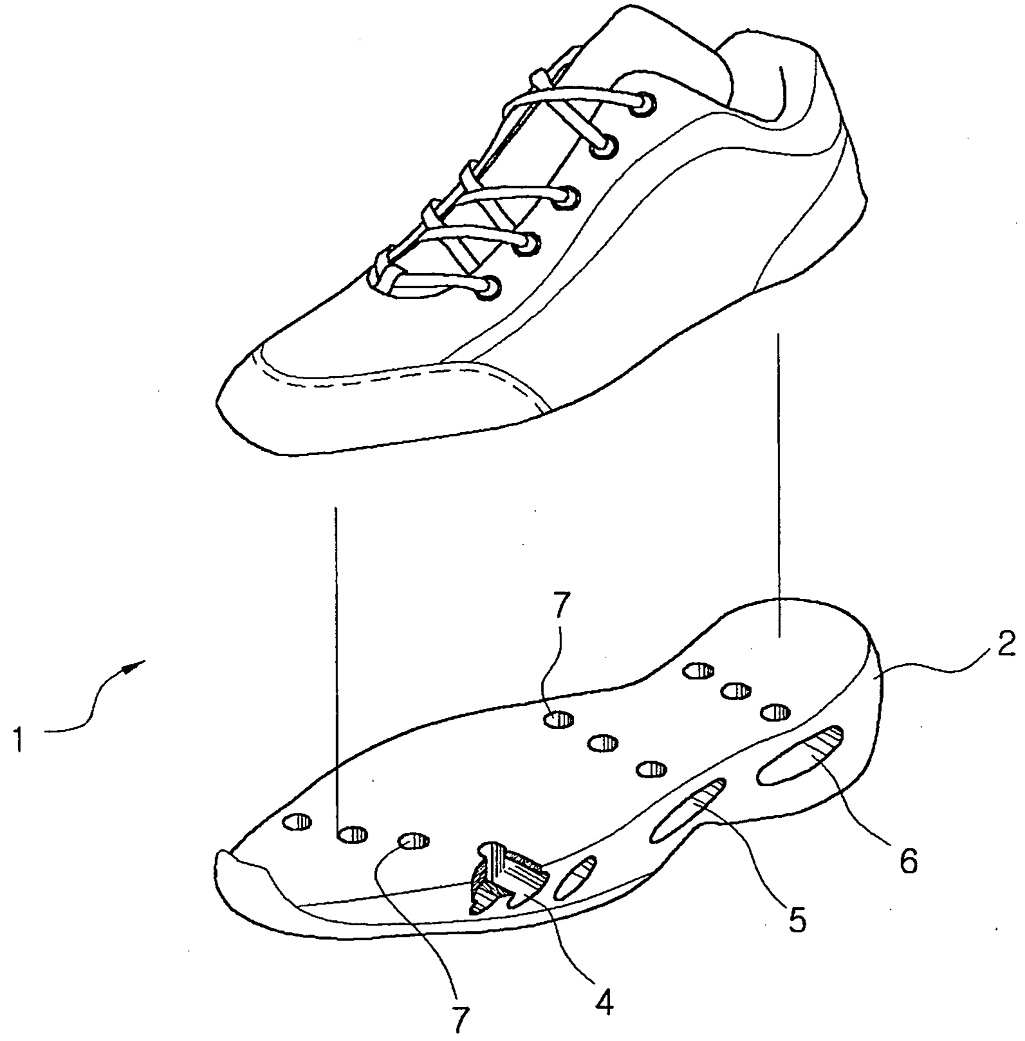


Figure 4

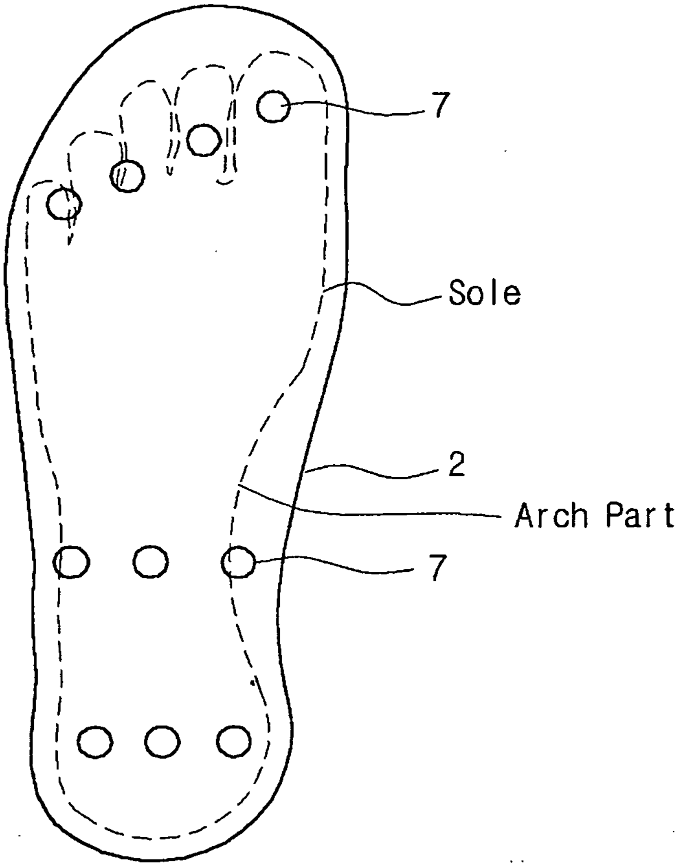
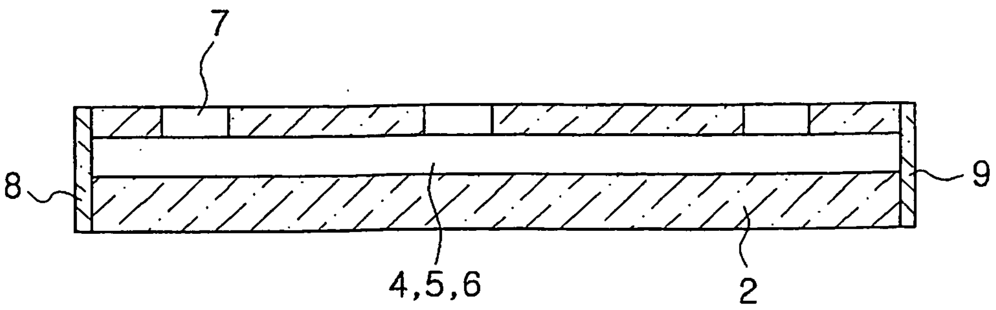


Figure 5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR02/01587

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A43B 13/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A43B 7/06, 13/14, 17/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1975, Korean Utility models and applications for Utility models since 1975
Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search terms used)

PAJ, KIPASS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	KR 98-87847 A (KIM) 05 Dec. 1998 see the whole document	1, 4 2 - 3
Y A	JP 55-111401 U (TAMAS Co. Ltd.) 05 Aug. 1980 see the whole document	1, 4 2 - 3
T	KR 2001-88977 A (KIM) 29 Sep. 2001 see the whole document	1 - 4
A	JP 02-68703 U (IKAMI) 24 May 1990 see the whole document	1 - 4
A	US 4,888,887 A (Terry S. Solow) 26 Dec. 1989 see the whole document	1 - 4

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

*	Special categories of cited documents:
"A"	document defining the general state of the art which is not considered to be of particular relevence
"E"	earlier application or patent but published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
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"P"	document published prior to the international filing date but later than the priority date claimed
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"X"	document of particular relevence; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevence; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search

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